Teaching for Transfer in the Common Core Era

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TEACHING FOR TRANSFER IN THE COMMON CORE ERA

Peter Dewitz ■ Michael F. Graves

Teaching for transfer is the key to the CCSS. We will show you how to teach for transfer, helping students apply knowledge, strategies, and attitudes throughout their schooling and beyond.

- A group of fourth-grade teachers at their weekly planning meeting are concerned that their students can make inferences when they complete daily worksheets, selecting from four choices in a multiple-choice quiz, but cannot do so in a class discussion with complex texts. The thinking students demonstrate, with carefully designed materials, does not happen with authentic texts during a free flowing discussion (Key Ideas and Detail, RI.4.1).
- Mrs. Smith's third graders have learned about text structures: chronology, compare and contrast, and problem/solution. When reading carefully crafted paragraphs, they can correctly label the text structure that each paragraph exemplifies. Now, a group of her students are reading a text comparing reptiles and mammals for their independent work. They note some of the differences, like scales versus fur, but they struggle to find the similarities (Integration of Knowledge and Ideas, RI.3.8).
- In Mr. Jones' sixth-grade class, the students spend considerable time learning to use context clues. Given short passages, they have become adept at locating words they do not know, identifying words that provide clues to the unknown word's meaning, and then inferring that meaning. They are able to demonstrate this skill on an end-of-unit multiple-choice test, but Mr. Jones wonders whether and how these new abilities are building the vocabulary of his students. Does his work on context clues make a difference? (Craft and Structure, RI.6.4)

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These three scenarios, each dealing with different Common Core State Standards (CCSS), describe situations we have encountered repeatedly in our work with teachers and students over the past several years, and each raises serious questions about transfer. Transfer—the ability to "extend what has been learned in one context to a new context" (Bransford, Brown, & Cocking, 1999)—is, of course, a major goal of schooling. "Schools are supposed to be stopovers in life, not ends in themselves. The information, skills, and understandings they offer are knowledge-to-go, not just to use on site" (Perkins & Salomon, 2012). As teachers, we hope that what students have learned in today's class will transfer to their work in tomorrow's and next week's classes, to situations they face as they progress through school, to their reading a wide variety of materials both in and out of school, and eventually to their succeeding in their social, civic, and professional lives.

Pause and Ponder

- Thinking specifically of your students, which skills, strategies, and knowledge transfer easily and which do not?
- Look closely at the CCSS. Which of these will require a strong focus on transfer?
- How will you know that your students have transferred knowledge strategies and dispositions? Does passing a benchmark or interim assessment mean that transfer has taken place?
- Do you take steps to ensure that initial learning is sound and explain to your students when, where, how, and why transfer is important?

The goal of transfer underlies the oft-repeated purpose of the Common Core State Standards (National Governors Association Center for Best Practices [NGA Center] & Council of Chief State School Officers [CCSSO], 2010)—to "ensure that all students are college- and career-ready." In college, at work, or as engaged citizens, our students will need to draw inferences, compare and contrast information, and infer the meanings of new words—the three CCSS goals illustrated in our opening scenarios. In fact, as David Coleman, one of the principal architects of the Standards, has specifically noted, ensuring that students are prepared to succeed in college and their careers—to transfer what they have learned from school to the world beyond school—is the first principle underlying the Standards (Coleman, 2011).

Yet transfer does not always receive the attention it deserves. The word "transfer" does not appear in the Standards themselves, and the Standards are silent on the question of how we can promote transfer, as they are on other matters of instruction. Many of the materials and procedures common in today's schools, including commercial reading curricula and district pacing guides, encourage the teaching of many skills and strategies but do little to help students master them or use them outside of the classroom (Calfee & Chambliss, 1998; Dewitz, Jones, & Leahy, 2009). Materials that present skills and strategies in contrived and limited contexts that do not represent the authentic situations actually work against transfer. High-stakes testing and accompanying benchmark tests invite and even foster teaching to the test and limit transfer to performance on the test (Shepard, 2010). As illustrated in the scenarios that begin this article and as has been repeatedly found in more than 100 years of research, students frequently fail to apply the knowledge and skills learned in one situation to other situations. Additionally, as we have known for more than 100 years, transfer can be difficult to achieve (Bereiter, 1995; Perkins & Salomon, 1988; Thorndike & Woodworth, 1901; Willingham, 2002).

The goals of this article are to define transfer, to consider how transfer comes about, and to suggest specific steps teachers can take to promote transfer. Transfer is required for students to reach CCSS goals such as determining central ideas or themes (RL.1), understand how author's point of view shapes content (RL.6), evaluate the arguments in a text (RI.8), and analyze two or more texts to build knowledge (RI.9). Understanding transfer is also important because teachers are increasingly asked to monitor students' progress, and thus they need to know how to design or select assessments that demonstrate transfer, not just initial learning.

What Is Transfer?

Transfer, as we just noted, is the ability to "extend what has been learned in one context to a new context" (Bransford et al., 1999). For example, suppose you taught first-graders the silent *e* rule—that *e* at the end of a word is often silent and changes the sound of the vowel from short to long—and gave students a number of examples illustrating the rule, including *can/cane, tap/tape, bit/bite,* and others. At some later time, a student runs across the pair *pan/pane,* which has not been taught, and without consciously thinking about it applies the silent *e* rule to come up with the correct pronunciations. The student has transferred a skill learned in one setting and with certain words to a future setting and a new word.

"CCSS are quietly but consistently speaking about transfer to new contexts over a considerable span of time—from the K–12 years to college and then to careers."

As another example, consider a word-learning strategy such as using context to infer the meanings of unknown words. You might initially teach the strategy to fourth-graders using some prepared materials that were written to teach students to use context clues. At some later time, a student runs across the following sentences in a passage about rain forests: "People often imagine that the rain forest is thickly covered with plants. But, in fact, growth is sparse because little sunlight reaches the forest floor." Not familiar with the word *sparse*, the student recognizes that he does not know the word, decides that he needs to know it, thinks back to what he learned about using context clues, and infers that *sparse* means the opposite of "thickly covered," that it means something like "thinly covered."

Or consider still another example. Suppose that near the beginning of the year, your seventh-graders read Gordon Korman's *Schooled*, in which Cap, a boy new to Claverage Middle School, is teased and bullied, and suppose that your discussion and other activities surrounding the novel dealt with the problem of bullying. Later in the year, a new girl enters your class, and she becomes a target for teasing and bullying by several students. Some other students, however, recognize that bullying is taking place, realize that it is cruel and hurtful to the newcomer, decide to befriend the newcomer, and come up with a plan to stop the bullying.

These examples illustrate several features of transfer. To begin with, it needs to be recognized that various types of learning transfer, including skills, strategies, knowledge, and attitudes or dispositions. Using the silent *e* rule to decode new words is an example of skills transferring. Using the context clues strategy when coming across an unknown word is, of course, an example of strategies transferring. And students' applying what they had learned in reading and discussing *Schooled* to the plight of a new student in their school is an example of both knowledge about bullying and attitudes toward bullying transferring.

Another feature of transfer illustrated by the example is that the situation to which the initial learning is transferred can be nearer or farther from that initial learning. Moreover, these "distances" can be of various sorts, including temporal distance, differences in the context in which the learning is applied, and differences in the tasks the student faces. All three of the examples—use of the silent *e* rule, use of the context strategy, and application of what was learned about bullying—illustrate transfer across time. The silent *e* example probably shows the least distance in terms of context and task in that the context continues to be a CVC+*e* word and the task is determining the vowel sound. The transfer distance increases when students identify words like *provide* or *chrome* during their independent reading. The context clue example illustrates somewhat greater distance because the student is applying the strategy with authentic text rather than with contrived text. And the bullying example probably shows the greatest distance in both context and task in that the students are applying what they learned about bullying in a novel to a real-world situation and to behavior that is likely to be quite different from what they encountered in the novel. The CCSS are quietly but consistently speaking about transfer to new contexts over a considerable span of time—from the K–12 years to college and then to careers.

The distance between the initial learning and the situation to which it is transferred is typically described as a continuum from "near transfer" to "far transfer," and there is no real dividing line between near and far transfer. In fact, there is no sharp dividing line between initial learning and transfer. This is fine because the goal is not to say *this is learning* and *this is transfer*, but rather to realize that transfer is almost always a goal and deliberately work toward students' transferring what they learn in our classrooms to other tasks, to other classrooms, to their school work in future years, and to their lives once they leave school.

Because understanding the continuum from initial learning to near and far transfer is important to understanding

"Various types of learning transfer, including skills, strategies, knowledge, and attitudes or dispositions."

"There are two roads to transfer. Low road transfer is relatively simple; high road transfer requires deliberate thought."

transfer itself and to the task you face in promoting it, another example may be useful. Suppose Ms. Baker taught her fifth-grade students the 10 vocabulary words from the core reading program at the beginning of the week and gave them a multiple-choice test on those words at the end of the week. This would clearly be a test of learning rather than of transfer. Suppose also that at the end of the month, she gave them the same multiple-choice test on the words. Although the learning and the task are separated by some time, we probably would not call this transfer. Now suppose further that after the second multiple-choice test, she had the students use each of the 10 words in a sentence. This task is clearly not as closely related to the initial learning as the multiple-choice test, and we could certainly think of it as a case of transfer. But Ms. Baker taught 10 words week in and week out, following the guidelines of her program, and then gave her students a standardized vocabulary test, the vocabulary section of the Gates–MacGinitie Reading Test, at the end of the semester. At that point, she was checking to see if teaching 10 words each week resulted in students' improving their general vocabulary—clearly looking for transfer. We might call this intermediate transfer. But she could also give them a standardized comprehension test, perhaps the comprehension section of the Gates–MacGinitie. With this test, Ms. Baker is clearly checking for far transfer.

Finally, although we have not illustrated it in the examples we have given thus far, it is important to realize that transfer can be negative as well as positive. Students sometimes learn something in one setting and then misapply that knowledge in another. For example, a student who has learned the silent *e* rule might at some later time come across the word *have*, use the silent *e* rule to come up with the pronunciation /hav/ (which is not a word), and find that using the rule did not result in a word that he knew. This is a case of negative transfer; clearly not a good thing. But the miscue does indicate that the student learned the phonics rule and transferred it but has not yet learned the exceptions to the rule. Some negative transfer is bound to occur, but we can minimize negative transfer by carefully framing the transfer task for students. Appropriate framing while teaching the silent *e* rule includes noting that there are exceptions to the rule and giving examples of the exceptions.

How Transfer of Learning Comes About

Perkins and Salomon (1988; Salomon & Perkins, 1989) have described two different ways learning transfers that are both very helpful in understanding transfer and in understanding how to facilitate it. The first of these, which they term *low road transfer*, is the simpler of the two. Low road transfer takes place when the initial learning task and the transfer task are so similar that the learner automatically applies his initial learning to the transfer task. If, for example, you initially learn to drive a Chevy sedan, drive it for a while, and then buy a Ford pickup, you can probably drive the Ford with little or no extra effort or thought. Low road transfer requires several conditions: First, the skill that is to be transferred must be so well learned that no conscious reflection is required for the student to apply it to new content. That is, the skill needs to be automatic. Such is often the case with reading fluency. Initially, the student's rate, accuracy, and prosody improve with repeated practice on short pieces of text; his fluency has become firmly ingrained and automatic. He can then transfer that fluency to extended text and read these lengthy texts with fluency (Kuhn & Stahl, 2003).

Second, for low road transfer to occur, the skill or knowledge initially learned must be practiced in varied contexts. This is certainly the case in the practice students receive with many of the individual words they learn. A student might first learn the word *courageous* in reading Avi's *The True Confessions of Charlotte Doyle,* use it in writing a review of the book, meet it again in her history text, and hear it on the evening news. Since the student has met the word in many contexts, she is likely to be able to deal with it in additional contexts.

The third condition necessary for low road transfer to occur is that the context of practice and the context of application must be similar. It is quite likely that students readily transfer a strategy like finding the main idea as long as the practice example and the transfer examples are similar; say, short paragraphs in workbooks that deliberately highlight main ideas. But workbook practice pages for finding the main idea may induce little transfer to real-world reading tasks like finding important ideas in a history text or on the Internet.

The conditions of low road transfer—well-learned automatic skills and

practice in varied context—apply best to the foundational skills in the CCSS. Concepts of print (RF.1.1), phonemic awareness (RF.1.2), phonics and word recognition (RF.1.3), and fluency (RF.1.4) transfer when teachers adhere to the principles of low road transfer. The learning of individual word meanings and their understanding in new contexts is also an example of low road transfer. To achieve transfer for the three broad categories of the anchor standards—close reading for ideas and details, the integration of knowledge and ideas, and understanding how authors crafted their message—we must apply the principles of high road transfer.

The second sort of transfer Perkins and Salomon describe is termed *high road transfer*. High road transfer is quite different from low road transfer, more challenging for the student, and requires a deliberate set of mental actions and metacognition. High road transfer is required if the initial learning task and the transfer task are different enough that the learner has to do some thinking and make a conscious effort to apply his initial learning to the transfer task. If, for example, you initially learn to drive a Chevy sedan with automatic transmission and then buy a motorcycle, learning to drive the motorcycle will require some thought and some extra effort. The mechanics of acceleration, shifting, and braking, let alone balance, is simply different. The reader who learns to compare and contrast similar science fiction short stories (RL.5.9) and continues to do so when reading other pairs of short stories is engaging in high road transfer. Similarly, a reader who knows something about the structure of expository text (RI.4.5) and the function of text features (headings, subheadings, graphics, and captions; RI.4.7) might begin reading a social studies textbook by applying this knowledge to preview the ideas and build understanding. The reader is transferring her knowledge of text structure to aid her learning social studies material. High road transfer is what we think about when we ask students to apply skills and knowledge they have learned to new texts and new situations. High road transfer is absolutely vital if students are to reach the oft-stated goal of the CCSS: to become college- and career-ready.

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High road transfer is required when knowledge learned in one context is applied in a new context. In the initial stages of learning, knowledge is rather inflexible and bound to a context (Willingham, 2002). Students may learn about bullying from classroom discussions about recurring problems on the playground and how to solve them. They learn that the principles of bullying include force, abuse, intimidation, and assertion of dominance. Later, during language arts, they read "All Summer in a Day" (Bradbury, 1954), a science fiction short story set in a classroom on Venus where the children of Earth colonists, born and raised on Venus, pick on a girl who was born on Earth but then moved to Venus. Transfer of knowledge is necessary to recognize that bullying and envy are the themes of the story. Transfer requires understanding the deep structures or principles of knowledge behind a concept so students can recognize similarities when they are not obvious in new instances of that concept. At first thought, "All Summer in a Day" looks to be just a science fiction story, but that is merely the setting.

We have so far illustrated several points: that transfer is a crucial goal of schools, that it is essential for all the CCSS, that transfer is a complex process, and that in many cases transfer is difficult to achieve. While it is unlikely that schools will ever achieve as much transfer as we would like, we can do a lot in our classes to achieve more transfer than is typically the case. Here we present a number of suggestions, first focusing on some general principles of transfer, then turning our attention to low road transfer, and concluding with high road transfer. We summarize these suggestions in Figure 1.

Some General Principles of Teaching for Transfer

Recognize What Transfer Is and How It Is Important

Teachers must understand that transfer is the use of skills and knowledge learned in one setting to other settings; that the goal is for students to take what they learn in today's class and make use of that learning in tomorrow's class, next week's class, classes later in the year, classes they will attend in future years, and most importantly, to a variety of situations they will encounter outside of schools. Additionally, teachers must recognize that transfer is tremendously important and that we should not just teach for today or for the test in June. To the extent that schools fail to prepare children for life outside of school, they fail to do their job.

Mrs. Barr, a second-grade teacher, and Mr. Duffy, a fourth-grade teacher,

Figure 1 Basic Principles of Teaching for Transfer

	General Principles	
	1. Recognize what is transfer and how it is important. 2. Recognize where transfer does and does not take place. 3. Share information about transfer with your students. 4. Create positive attitudes and dispositions about transfer.	
Low Road Transfer (Hugging) 1. Ensure that skills are learned to the point of automaticity and can be applied without conscious effort. 2. Practice the skills in varied contexts. 3. Make the context of instruction and application similar.		High Road Transfer (Bridging) 1. Construct interesting units of instruction. 2. Employ forward-bridging techniques to link learned strategies or knowledge to new topics. 3. Employ backward-bridging techniques to help students apply previous learned knowledge and skills. 4. Use the detect, elect, and connect approach so students consciously learn when to apply prior strategies and knowledge. 5. Create positive social context through expansive framing.

frame classroom instruction with a mind to the future and continually stress to their students that they need specific skills and strategies to complete the tasks and solve the problems they will face during the year. The teachers use these principles to plan their instruction, focusing on the entire school year rather than just the next week or the next day. They list the standards students must master and the strategies necessary to perform to these standards. Then they teach the strategies early and provide plenty of practice and review so that the strategies are available to students as they work with different content through the school year.

Recognize Where Transfer Does and Often Does Not Take Place

We have stressed the difficulty of achieving transfer and the fact that, all too often, the transfer that we would like to achieve does not take place. It is important to recognize that while transfer can be difficult to achieve, schools have been very successful in transferring some things. Basic reading skills have proven to be highly transferrable (Bereiter, 1995). Most readers develop phonemic awareness, left-right processing of text, decoding skills, fluency, and a basic store of words, and are able to read a variety of relatively simple texts both in school and out. Mrs. Barr recognizes this fact and provides ample opportunities for students to build their fluency. Her classroom library is filled with easy books for the students to read. She regularly monitors and rewards students for their improving fluency.

Transfer related to reading tends to break down where students fail to use the vocabulary strategies, comprehension strategies, and knowledge gained in school to read, understand, and learn from complex texts. Mr. Duffy is aware of these difficulties and has constructed a curriculum that will help to ensure that transfer does take place. Early in the school year, he models strategies carefully; selects interesting, complex texts; and constructs engaging learning projects where those strategies will be useful.

Share Information About Transfer With Students

All too often, we unintentionally keep students in the dark about what we are trying to accomplish in school. Both Mrs. Barr and Mr. Duffy inform their students about the secret of transfer, since it is a major goal of the school year. They explain to students that much of what they are about to learn in class today is something that they will use in class tomorrow and in the days, weeks, and years to follow, both in and out of class (Graves, Ruda, Sales, & Baumann, 2012).

Teaching for Low Road Transfer: Use Hugging Techniques

We have already noted three conditions necessary for low road transfer. Here we restate them, couching them in actions that we as teachers can take: (1) Ensure that the skills students learn are learned to the point of automaticity; that students can apply them without hesitation or conscious attention. (2) Provide practice with both skills and knowledge in a variety of contexts so that the new learning is not tied to a single context or very few contexts. (3) Do everything possible to make the context

"We should not just teach for today or for the test in June."

of the initial learning and the context of application similar.

Perkins and Salomon (1988) call these techniques "hugging," a term that nicely evokes the image of two things close to each other. Mrs. Barr want to ensure that her students are becoming fluent readers, and they demonstrate their fluency not just with short fluency practice passages but also with the range of texts they encounter during language arts, science, and social studies (RF.2.4). She begins instruction by modeling fluency with a range of texts. She deliberately selects read-aloud texts from literature, science, and social studies. Next, she has the students practice fluency in pairs using short texts from the same sources. The students partner read, time each other, and record their growth in fluency. Finally, Mrs. Barr provides her students with a range of texts to read during reading/language arts and in the content areas. She monitors their reading and has frequent conferences to assess whether their newly acquired fluency transfers to these texts.

Teaching for High Road Transfer

High road transfer is challenging and requires a deliberate set of mental actions employed to solve important tasks within a motivating environment; it is a metacognitive task. To illustrate high road transfer, we take you into Mr. Duffy's classroom as he works with his fourth-grade students to determine the main idea of historical texts. Doing so will require a focus on two Common Core standards: determining main ideas and themes from text evidence (RI.4.2) and using text features (RI.3.5) as a guide to finding main ideas.

Construct Interesting Units of Instruction

Mr. Duffy consciously constructs units of study where strategies are used to study interesting and important topics. His fourth-graders are learning to find the main idea, not as an end in itself, but a tool for learning about 19th-century immigration to the United States. The students will be reading from their social studies textbooks, from historical fiction, and from sources on the Internet. In all of these texts, they will need to determine the important ideas, and focusing on text features and text structures will help them do so. Mr. Duffy explains how these strategies and knowledge will be applied during the unit.

"Motivations and dispositions are every bit as important as cognition to achieve high road transfer."

Create Positive Attitudes and Dispositions

Although the cognitive aspects of learning have received much more attention than have its motivational and dispositional aspects, we are increasingly realizing that motivations and dispositions are every bit as important as cognition (National Research Council, 2004). This is as true with respect to transfer as it is with other aspects of learning (Bereiter, 1995; Perkins & Salomon, 2012). The type of transfer that we often fail to achieve—high road transfer—requires conscious effort and real work. And unless students are motivated and disposed to put in such work as part of their learning, they are unlikely to engage in it. Students should understand that learning new strategies and building knowledge will lead to even more learning, especially for tasks they find interesting.

Mr. Duffy promotes motivation in a number of ways. First, he designs the units so that there they are intrinsically interesting. In this case, the unit on immigration focuses not just on the 19th century, but also on problems faced by new immigrants in the school. He gives students choices in what they read. While everyone needs to read some common texts, students can select from several historical novels and research different websites. Finally, the unit culminates with students researching when and how a personal ancestor came to the United States. Mr. Duffy does not minimize the difficulty of the task. He lets the students know that the unit will require hard work and careful thinking but that he will be there to assist them.

Use Bridging Techniques

Because high road transfer is more challenging for the learner than low road transfer, we as teachers should provide students with a good deal of help. Perkins and Salomon (1988) call the primary approach to assisting students with high road transfer "bridging." Bridging consists of taking direct steps to help students apply their initial learning in other situations.

Mr. Duffy begins his instruction by modeling a strategy for determining main ideas using relatively easy expository text, initially just paragraphs and then multi-paragraph passages. He stresses looking for text features—headings, subheadings, bold print, topic sentences, and the like. Once students demonstrate competence

with the strategy, he "bridges" their learning from these contrived materials to the social studies books and other unit resources. Before students read, Mr. Duffy reminds them of the strategies they have learned and encourages them to apply them as they read each new section of the material. At other times, before work begins, Mr. Duffy asks students where they might apply the strategy of finding the main idea. This helps them understand that the strategy is a tool and not an end in itself. The students begin to anticipate situation where the new cognitive tool will be useful.

The bridging technique Mr. Duffy employed is called "forward bridging." At the time of the initial learning, he deliberately helps students build bridges between that initial learning and situations to which they might transfer that learning. "Backward bridging" is another possibility. Mr. Duffy's students have learned the comprehension strategy of using text structure and have worked specifically with cause-and-effect structures. At some later time, when they are reading an article about why millions left Europe to come to America that is organized around causes and effects, he reminds them of studying cause-and-effect structures, notes that this article seems to make a lot of use of that structure, and suggests they might outline it as a series of causes and effects. He also provides them with a graphic organizer that lists causes on the left side of the page and effects on the right, and students use this graphic organizer as they develop their notes.

Repeatedly Model and Teach the Detect-Elect-Connect Process

Another suggestion for promoting transfer comes from recent work from Perkins and Salomon (2012) that emphasizes the motivational, dispositional, and metacognitive aspects of transfer. In looking more closely at what needs to happen in backward-reaching high road transfer, Perkins and Salomon observe that three processes are necessary: *detect*, *elect*, and *connect*. First, the student must *detect* that past learning may be useful in the situation. Next, he must *elect* to pursue that possible link. And, finally, he must *connect* the past learning to the current task.

Some weeks later, Mr. Duffy's students are studying habitats and the forces that cause them to change, and several students struggle to understand the material. Mr. Duffy reminds them of the main idea and text structure strategies they learned in the immigration unit and asks them how they can apply these strategies to their biology studies. The students re-read the passage, and a few detect that the author has used a cause-and-effect structure. Others elect to use the graphic organizer from the immigration unit. Finally, they connect the strategy and the graphic organizer to the new text and realize that their understanding improves when they actually map out causes and effects about changing habitats.

"A strategy is a tool not an end in itself."

Use Expansive Framing to Promote High Road Transfer

Randi Engle and her colleagues (Engle, 2006, 2012; Engle, Lam, Meyer, & Nix, 2012) have proposed and investigated an approach to promoting high road transfer that is in some ways similar to bridging, but it is prompted by a sociocultural perspective rather than the cognitive perspective behind bridging. They call their approach "expansive framing." They believe that "learning and transfer contexts can be socially framed in such a way that this will influence students' propensity to transfer what they learn" (Engle, 2006, p. 452). The nature of expansive framing is further explained by contrasting it to its opposite, "bounded framing." Using bounded framing, a teacher frames a lesson as "a one-time event of learning something that students are never likely to use again" (Engle, 2012, p. 348). Curriculum pacing guides, for example, sometimes reinforce an orientation toward bounded framing by designating Week 2 for author's purpose, Week 3 for fact and opinion, Week 4 for cause and effect, and so on.

Conversely, using expansive framing, a teacher frames a lesson as "an initial discussion of an issue that students will be actively engaging with throughout their lives" (Engle, Lam, Meyer, & Nix, 2012, p. 221). Such framing can foster students' expectations that they will

TAKE ACTION!

1. Study the reading lessons that you and your colleagues regularly teach. Do you incorporate the principles of expansive framing? How might you improve the motivational message of these lessons?
2. Make a list of the knowledge, skills, and strategies that you teach. Decide which are likely to transfer through the low road and which demand the high road principles and attention.
3. With your colleagues, plan how the skills and strategies you teach in reading will be applied to social studies and science texts.

use their initial learning later, help students see prior knowledge as relevant to current learning situations, encourage students to draw on their prior knowledge in dealing with new materials or a new issue, and help students view themselves as active and competent learners who should and are able to generate their own solutions to new problems.

Some steps toward expansive framing are concrete and much like the steps used in promoting forward and backward bridging. Mr. Duffy frames his unit on immigration as more than a topic to be learned; he frames it as a set of concepts that students can use to study contemporary issues. Not only will the students use main idea and text structure strategies to comprehend new texts, but they will also use the knowledge they develop from the immigration unit to study current issues. Mr. Duffy explains that by studying 19th-century immigration, students will learn about the problems and attitudes that immigrants faced and the solutions devised by governments, private organization, and the immigrants themselves. He goes on to explain that students will then apply what they have learned about 19th-century immigration to study the problems faced by the new Hispanic, Asian, and Haitian students in their school.

Other steps are less concrete and illustrate the sociocultural aspects of expansive framing. The idea here is that our overall approach in the classroom sends the message that the students, ourselves, and others who have come before us and will follow are part of a community of learners who both independently and together are responsible for learning. Thus, our job as teachers is to build a spirit of inquiry and efficacy in students, convincing them of their competence and responsibility in creating knowledge.

Concluding Remarks

In this article we have defined transfer, noted its central importance to schooling, observed that schools have not always succeeded in teaching for transfer, discussed Perkins and Salomon's views about how transfer takes place, and described some different types of transfer. We have also—and this is the most important part of the article—discussed specific steps teachers can take to promote transfer. By taking the steps we listed in Figure 1 and discussed in some detail, teachers can maximize the possibility that students will indeed take what they learn in today's classes and become college- and career-ready.

Another step will take thought and work: curriculum alignment. The CCSS are largely silent on curriculum design and instructional planning. The Standards do not tell you how to sequence, teach, or apply the knowledge, skills, and strategies. To promote transfer, a teacher must carefully plan when and where knowledge and strategies will be applied after they are introduced and practiced. The core reading program or the district pacing guide may indicate when to teach determining the main idea, but teachers must plan when to apply it to reading science and social studies material. It may take several weeks to help students acquire the strategy of using context cues to infer word meanings, but then teachers must ensure that they guide students to use this strategy when reading across a range of content materials.

In closing, we want to again stress that while transfer has proven difficult to achieve, while there will never be as much transfer as we could want, and while transfer is a complex matter, the steps we have suggested for increasing transfer are ones that every teacher can employ in his or her classroom and that will make a substantial difference in students' ability and propensity to transfer what they have learned. Achieving college and career readiness means teaching for transfer. Students must demonstrate their mastery of the CCSS in school, but even more importantly, they must make use of what they have learned in college and in the workplace.

"The CCSS are largely silent on curriculum design and instructional planning. They do not tell you how to sequence, teach, or apply knowledge, skills, and strategies."

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